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Figure 1 (page 1 of 2)

| Members of the TNF/TNFR Superfamily |               | Accession                                   | Human Chromosome | Mouse Chromosome | Phenotypes associated with mutations | Additional functional observations   |
|-------------------------------------|---------------|---|------------------|------------------|--------------------------------------|--|
| Standardized                        | Other Name(s) |   |                  |                  |                                      |  |
| Receptor                            |               |   |                  |                  |                                      |  |
| NGFR                                | TNFRSF10      | p75   | M14764           | 17q21-q22        | 11, 55.8 cM                          | Defective sensory neuron innervation; impaired heat sensitivity  |
| Troy                                | TNFRSF19      | Taj   | AF187888         | 13q12.11-12.3    | 14                                   | Expressed in hair follicles and epithelium; the mouse gene is located near the waved coat locus.                         |
| EDAR                                |               |   | AF130988         | 2q11-q13         | 10, 29.0 cM                          | Hypohydrotic ectodermal dysplasia - abnormal tooth, hair and sweat gland formation                                       |
| XEDAR                               | EDA-A2R       |   | AF206812         | X                |                                      | Likely role in skin, hair and tooth formation  |
| CD40                                | TNFRSF5       | p50, Dp50                                   | 260892           | 20q12-q13.2      | 2, 87.0 cM                           | Defective Ig class switching and GC formation causing immunodeficiency   |
| DcR3                                | TNFRSF6B      |   | AF104419         | 20q13            |                                      | Secreted decoy receptor for FasL with possible role in tumor evasion   |
| FAS                                 | TNFRSF6       | CD95, APO-1, APT1                           | M87454           | 10q24.1          | 19, 23.0 cM                          | Impaired activation-induced T cell death; lymphoproliferation; autoimmunity (ALPS)                                       |
| OX40                                | TNFRSF4       | CD134, ACT35, TXGP1L                        | X75982           | 1p36             | 4, 79.4 cM                           | Defective T cell responses   |
| AITR                                | TNFRSF18      | GITR  | AF125304         | 1p36.3           | 4                                    | Glucocorticoid-induced; inhibits T cell receptor dependent apoptosis   |
| CD30                                | TNFRSF8       | K1-1, D18160E                               | M83554           | 1p36             | 4, 75.5 cM                           | Marker of Reed-Sternberg cells in Hodgkin's disease  |
| Hv6A                                | TNFRSF14      | HVEM, ATAR, TR2, LIGHTR                     | U70321           | 1p36.3-p36.2     |                                      | Probable role in T cell proliferation and receptor for herpes simplex virus  |
| 4-1BB                               | TNFRSF3       | CD137, ILA                                  | L12964           | 1p36             | 4, 75.5 cM                           | Probable role in T cell responses  |
| TNFR2                               | TNFRSF1B      | CD120b, p75, TNFRB, TNFR80, TNF-R-II        | M22316           | 1p36.2-p36.2     | 4, 75.5 cM                           | Increased sensitivity to bacterial pathogens; decreased sensitivity to LPS; reduced antigen-induced T cell apoptosis     |
| DR3                                 | TNFRSF12      | TRAMP, WSL-1, LARD, WSL-LR, DR3, TR3, APO-3 | U72769           | 1p36.2           |                                      | A linked, partially duplicated copy of the gene encodes a potential decoy receptor                                       |
| CD27                                | TNFRSF7       | 1p36, S182                                  | M63928           | 12p13            | 6, 60.35 cM                          | Defective T cell responses   |
| TNFR1                               | TNFRSF1A      | CD120a, p55-R, TNFAR, TNFR50, TNF-R-I       | M75866           | 12p13.2          | 8, 80.55 cM                          | Impaired clearance of bacterial pathogens; resistance to LPS; LN present; defective GC formation; defective PP formation |
| LTBR                                | TNFRSF3       | TNFR2-RP, TNFCR, TNF-R-III                  | L04270           | 12p13            | 6, 60.4 cM                           | Absence of LN, PP; defective GC formation  |
| RANK                                | TNFRSF11A     | TRANCE-R                                    | AF018253         | 18q22.1          |                                      | Osteopetrosis; absence of osteoclasts; absence of lymph nodes; PP present; abnormal B cell development                   |
| TACI                                |               | CANL, interactor                            |                  | AF023614         | 17p11                                | 11   |
| BCMA                                | TNFRSF17      | BCM   | Z29574           | 16p13.1          |                                      | Probable role in B cell responses  |
| DR6                                 |               | TR7   | NM_014452        | 6p21.1-12.2      |                                      |  |

(Continued next page)

Figure 1 (page 2 of 2)

| Continued.      |           | Standardized Other Names                    | Accession | Human Chromosome | Mouse Chromosome | Phenotypes associated with mutations  | Additional functional observations                           |
|-----------------|-----------|---|-----------|------------------|------------------|---|--|
| Receptor        |           |   |           |                  |                  |   |  |
| OPG             | TNFRSF11B | OCIF, TR1 osteoprotegerin                   | U94332    | 8Q24             |                  | Osteoporosis; arterial calcification  | Probable inducer of lymphocyte death and activation          |
| DR4             | TNFRSF10A | Apo2, TRAILR-1                              | U90876    | 8p21             |                  |   | Probable inducer of lymphocyte death and activation          |
| DR5             | TNFRSF10B | KILLER, TRICK2A, TRAIL-R2, TRICKB           | AF012628  | 8p22-p21         |                  |   | GPI-linked decoy receptor—interferes with TRAIL signaling    |
| DcR1            | TNFRSF10C | TRAILR3, LT, TRID                           | AF012536  | 8p22-p21         |                  |   | Transmembrane decoy receptor—interferes with TRAIL signaling |
| DcR2            | TNFRSF10D | TRUNDD, TRAILR4                             | AF029761  | 8p21             |                  |   |  |
| Ligand          |           |   |           |                  |                  |   |  |
| EDA             |           | EDA1  | NM_001309 | Xq12-q13.1       | X, 57.0 cM       | Hypohydrotic ectodermal dysplasia—abnormal tooth, hair and sweat gland formation  |  |
| CD40L           | TNFSF5    | IMD3, HIGM1, TRAP, CD154, gp39              | X67878    | Xq26             | X, 18.0 cM       | Defective T cell and IgG responses; hyper IgM syndrome  |  |
| FasL            | TNFSF6    | APT1LG1                                     | U11821    | 1q23             | 1, 85.0 cM       | Impaired activation-induced T cell death; lymphoproliferation; autoimmunity; ALPS   |  |
| OX40L           | TNFSF4    | gp34, TXGP1                                 | D20224    | 1q25             | 1, 84.9 cM       | Defective T cell responses  |  |
| ATRL            | TNFSF18   | TL6, NQTRL                                  | AF125300  | 1q23             |                  |   | Inhibits T cell receptor-dependent apoptosis                 |
| CD30L           | TNFSF8    |   | L08753    | 9p33             | 4, 32.2 cM       |   | Possible role in malignant lymphocyte disorders              |
| VEG1            | TNFSF15   | TL1   | AF038390  |                  |                  |   | Potential vascular endothelial cell growth inhibitor         |
| LIGHT           | TNFSF14   | LT <sub>α</sub> , HVEM-L                    | AF036581  | 19 (probable)    | 17               |   |  |
| 4-1BBL          | TNFSF9    |   | U03398    | 19p13.2          | 17               |   | Defective T cell responses                                   |
| CD27L           | TNFSF7    | CD70  | L08026    | 19p13            | 17, 20.0 cM      |   |  |
| LT <sub>β</sub> | TNFSF1    | TNFB, LT                                    | X01393    | 6p21.3           | 17, 19.06 cM     | Absence of LN and PP; disorganized splenic microarchitecture; defective GC formation  |  |
| TNF             | TNFSF2    | tumor necrosis factor, cachectin, TNFA, DIF | X01394    | 6p21.3           | 17, 19.06        | LN present; defective GC formation; increased susceptibility to microbial pathogens   |  |
| LT <sub>β</sub> | TNFSF3    | TNFC, p33                                   | L11015    | 6p21.3           | 17, 19.06        | Absence of peripheral LN and PP; presence of mesenteric and some cervical LN; defective GC formation  |  |
| TWEAK           | TNFSF12   | DR3L, APO3L                                 | AF030069  | 17p13            | 117              |   | Potential role in monocyte and NK cell cytotoxicity          |
| APRIL           | TNFSF13   |   | NM_003808 | 17p13.1          | 117              |   | Probable role in B cell responses                            |
| BLYS            | TNFSF13B  | BAFF, THANK, TALL1                          | AF132600  | 13q32-34         |                  |   | Probable role in B cell responses                            |
| RANKL           | TNFSF11   | TRANCE, OPGL, ODF                           | AF013171  | 13q14            | 14, 45.0         | Osteoporosis; absence of osteoclasts; absence of lymph nodes; PP present; normal splenic architecture; abnormal B cell and T cell development | Required for initiating mammary gland development            |
| TRAIL           | TNFSF10   | Apo-2L, TL2                                 | U7518     | 3q26             |                  |   |  |

Title: SCREENING METHODS TO IDENTIFY  
TREATMENTS FOR AUTOIMMUNE DISEASE

Applicant(s): Denise Faustman

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## INHIBITORS OF APOPTOSIS

Oncogene Research Products

| <u>PRODUCT NAME</u>  | <u>MOLECULAR<br/>WEIGHT</u> | <u>SEQUENCE</u>   | <u>CAT.<br/>NO.</u> | <u>KNOWN<br/>TARGET<br/>CASPASES</u> |
|--|-----------------------------|---|---------------------|--------------------------------------|
| A23187, Free Acid, <i>Streptomyces chartreusensis</i>                                | 523.6                       |   | 100105              |                                      |
| A23187, Mixed Calcium-Magnesium Salt   |                             |   | 100106              |                                      |
| N-Acetyl-L-cysteine  | 163.2                       |   | 106425              |                                      |
| Actinomycin D, <i>Streptomyces</i> sp.   | 1255.5                      |   | 114666              |                                      |
| 6-Amino-1,2-benzopyrone, Hydrochloride   | 197.6                       |   | 130070              |                                      |
| 5-Aminoisoquinolinone, Hydrochloride   | 196.7                       |   | 164300              |                                      |
| 3-Aminobenzamide   | 136.2                       |   | 165350              |                                      |
| ALLN   | 383.5                       | N-Acetyl-Leu-Nle-CHO  | 208719              |                                      |
| ALLN in Solution   | 383.5                       |   | 208750              |                                      |
| ALLM   | 401.6                       | N-Acetyl-Leu-Leu-Met-CHO  | 208721              |                                      |
| Anisomycin, <i>Streptomyces griseolus</i>  | 265.3                       |   | 176880              |                                      |
| Antimycin A3   | 520.6                       |   | 178205              |                                      |
| Antimycin A3, 2-Methoxy-   | 534.6                       |   | 178210              |                                      |
| Aphidicolin  | 338.5                       |   | 178273              |                                      |
| Aurintricarboxylic Acid  | 422.4                       |   | 189400              |                                      |
| Baicalein  | 270.2                       |   | 196322              |                                      |
| BAPTA/AM   | 764.7                       |   | 196419              |                                      |
| <i>bcl-2</i> Antisense Oligonucleotide, Sodium Salt                                  | 6058.6                      |   | 197208              |                                      |
| <i>bcl-2</i> Antisense Oligonucleotide, Sodium Salt, Fluorescein-Labeled             | 6634.1                      |   | 197211              |                                      |
| <i>bcl-2</i> Antisense Oligonucleotide, Sodium Salt, Negative Control                | 6058.6                      |   | 197210              |                                      |
| <i>bcl-2</i> Antisense Oligonucleotide Set   |                             |   | 197212              |                                      |
| <i>bcl-x<sub>3</sub></i> Antisense Oligonucleotide, Sodium Salt                      | 7426                        |   | 197203              |                                      |
| <i>bcl-x<sub>3</sub></i> Antisense Oligonucleotide, Sodium Salt, Fluorescein-Labeled | 8001.5                      |   | 197206              |                                      |
| <i>bcl-x<sub>3</sub></i> 2 Antisense Oligonucleotide, Sodium Salt, Negative Control  | 7346.1                      |   | 197205              |                                      |
| <i>bcl-x<sub>3</sub></i> 2 Antisense Oligonucleotide Set                             |                             |   | 197214              |                                      |
| Betulinic Acid   | 456.7                       |   | 200498              |                                      |
| BH3I-1   | 320.4                       |   | 286890              |                                      |
| BH3I-2'  | 556.5                       |   | 286891              |                                      |
| Bongkrekic Acid, Triammonium Salt  | 537.7                       |   | 203671              |                                      |
| Caffeine   | 194.2                       |   | 205548              |                                      |
| Calpain Inhibitor III  | 382.5                       | Z-Val-Phe-CHO   | 208722              |                                      |
| Calpain Inhibitor IV   | 557.7                       | Z-Leu-Leu-Tyr-CH <sub>2</sub> F   | 208724              |                                      |
| Calpain Inhibitor V  | 407.5                       | Mu-Val-HPh-CH <sub>2</sub> F Mu = morpholinoureidyl; HPh = homophenylalanyl | 208726              |                                      |
| Calpain Inhibitor VI   | 372.5                       | 4-Fluorophenylsulfonyl-Val-Leu-CHO  | 208745              |                                      |
| Calpain Inhibitor Set  |                             |   | 208733              |                                      |

Figure 2 (page 1 of 5)

**Title: SCREENING METHODS TO IDENTIFY  
TREATMENTS FOR AUTOIMMUNE DISEASE**

Applicant(s): Denise Faustman

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|   |        |  |        |               |
|---|--------|--|--------|---------------|
| Calyculin A, <i>Discodermia calyx</i>           | 1009.2 |  | 208851 |               |
| Caspase Active Site Peptide                     | 688.8  |  | 235416 |               |
| Caspase Inhibitor I                             | 467.5  | Z-Val-Ala-Asp(OMe)-CH <sub>2</sub> F   | 627610 | 1,3,4,7       |
| Caspase Inhibitor I, Biotin Conjugate           | 672.8  |  | 218742 | 1,3,4         |
| Caspase Inhibitor I, Cell-Permeable             | 1827.3 |  | 218830 |               |
| Caspase Inhibitor I, Cell-Permeable in Solution | 1827.3 | Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Val-Ala-Asp-CHO     | 218831 |               |
| Caspase Inhibitor II                            | 329.4  | Ac-Val-Ala-Asp-CHO   | 218735 | 1,3,4,7       |
| Caspase Inhibitor III                           | 263.3  | Boc-Asp(OMe)-CH <sub>2</sub> F   | 218745 | All           |
| Caspase Inhibitor IV                            | 355.8  | Boc-Asp(OBzl)-CMK  | 218784 | 1             |
| Caspase Inhibitor V, Biotin Conjugate           | 863.0  | Z-Val-Lys-X-(Biotin)-Asp(OMe)-CH <sub>2</sub> F(x = linker)                            | 219000 | All           |
| Caspase Inhibitor VI                            | 453.5  | Z-Val-Ala-Asp-CH <sub>2</sub> F  | 219007 | 1,3,4,7       |
| Caspase Inhibitor VII                           | 377.8  | Ac-Val-Ala-Asp-CMK   | 218726 | 1,3,4,7       |
| Caspase Inhibitor VIII                          | 543.6  | Ac-Val-Asp-Val-Ala-Asp-CHO   | 218729 | 2,3,7         |
| Caspase Inhibitor Negative Control              | 386.4  |  | 342000 |               |
| Group III Caspase Inhibitor I                   | 610.6  | Z-Ala-Glu-(OMe-Val-Asp(OMe)-CH <sub>2</sub> F  | 368620 | 6,8,9,10      |
| Group III Caspase Inhibitor II                  | 458.5  | Ac-Ala-Glu-Val-Asp-CHO   | 368625 | 6,8,9,10      |
| Caspase Inhibitor Set I                         |        |  | 235429 | 1             |
| Caspase Inhibitor Set II                        |        |  | 218772 | 1,2,3,5,6,8,9 |
| Caspase Inhibitor Set III                       |        |  | 218806 |               |
| Caspase Inhibitor Set IV                        |        |  | 218825 |               |
| Caspase Inhibitor, Fluorogenic                  | 775.7  | DAcF <sub>5,6</sub> -VAD-FMK   | 218827 | 1,3,4,7       |
| Caspase-1 Inhibitor                             | 492.5  | Ac-Tyr-Val-Ala-Asp-CHO   | 400010 | 1,4           |
| Caspase-1 Inhibitor, Cell-Permeable             | 1990.5 | Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Tyr-Val-Ala-Asp-CHO | 400011 | 1,4           |
| Caspase-1 Inhibitor II                          | 541.0  | Ac-Tyr-Val-Ala-Asp-CMK   | 400012 | 1,4           |
| Caspase-1 Inhibitor II, Biotin Conjugate        | 725.3  | Biotin-Tyr-Val-Ala-Asp-CMK   | 400022 | 1,4           |
| Caspase-1 Inhibitor III, Biotin Conjugate       | 946.9  | Biotin-Tyr-Val-Ala-Asp-Fluoroacetyloxy-methylketone                                    | 400024 | 1,4           |
| Caspase-1 Inhibitor IV                          | 654.7  | Ac-Tyr-Val-Ala-Asp   | 400015 | 1,4           |
| Caspase-1 Inhibitor V                           | 454.3  | Z-Asp-CH <sub>2</sub> -DCB   | 400019 | All           |
| Caspase-1 Inhibitor VI                          | 630.7  | Z-Tyr-Val-Ala-Asp(OMe)-CH <sub>2</sub> F   | 218746 | 1,4           |

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|   |        |  |        |            |
|---|--------|--|--------|------------|
| Caspase-1 Inhibitor VII, Biotin Conjugate         | 938.1  | Ac-Tyr-Val-Lys(biotinyl)-Asp-2,6-Dimethyl-benzoyloxymethyl ketone                      | 218786 | 1          |
| Caspase-1 Inhibitor VIII                          | 611.6  | Ac-Trp-Glu-His-Asp-CHO   | 218727 | 1,8        |
| Caspase-2 Inhibitor I                             | 695.7  | Z-Val-Asp(OMe)-Val-Ala-Asp(OMe)-CH <sub>2</sub> F                                      | 218744 | 2          |
| Caspase-2 Inhibitor II                            | 603.6  | Ac-Leu-Asp-Glu-Ser-Asp-CHO   | 218814 | 2          |
| Caspase-3 Inhibitor I                             | 502.5  | Ac-Asp-Glu-Val-Asp-CHO   | 235420 | 3,6,7,8,10 |
| Caspase-3 Inhibitor I, Biotin Conjugate           | 686.7  | Biotin-Asp-Glu-Val-Asp-CHO   | 235422 | 3,6,7,8,10 |
| Caspase-3 Inhibitor I, Cell-Permeable             | 2000.4 | Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Asp-Glu-Val-Asp-CHO | 235423 | 3,6,7,8,10 |
| Caspase-3 Inhibitor I, Cell-Permeable in Solution | 2000.4 |  | 235427 |            |
| Caspase-3 Inhibitor II                            | 668.7  | Z-Asp(OCH <sub>3</sub> )-Glu(OCH <sub>3</sub> )-Val-Asp-(OCH <sub>3</sub> )-PMK        | 264155 | 3,6,7,8,10 |
| Caspase-3 Inhibitor II in Solution                | 668.7  |  | 264156 |            |
| Caspase-1 Inhibitor II, Biotin Conjugate          | 873.0  | Biotin-X-Asp(OMe)-Glu(OMe)-Val-Asp(OMe)-CH <sub>2</sub> F (X = Linker)                 | 218747 | 3,6,7,8,10 |
| Caspase-3 Inhibitor III                           | 551.0  | Ac-Asp-Glu-Val-Asp-CMK   | 218750 | 3,6,7,8,10 |
| Caspase-3 Inhibitor IV                            | 533.6  | Ac-Asp-Met-Gin-Asp-CHO   | 235421 | 3          |
| Caspase-3 Inhibitor V                             | 685.7  | Z-Asp(OMe)-Gin-Met-Asp(OMe)-CH <sub>2</sub> F  | 219002 | 3          |
| Caspase-3 Processing Inhibitor                    | 506.5  | Ac-Glu-Ser-Met-Asp-CHO   | 218787 | 3          |
| Caspase-3/7 Inhibitor I                           | 324.4  |  | 218826 |            |
| Caspase-4 Inhibitor I                             | 500.6  | Ac-Leu-Glu-Val-Asp-CHO   | 218755 | 4          |
| Caspase-4 Inhibitor I, Cell Permeable             | 1998.5 | Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Leu-Glu-Val-Asp-CHO | 218766 | 4          |
| Caspase-5 Inhibitor I                             | 763.8  | Z-Trp-Glu(OMe)-His-Asp(OMe)-CH <sub>2</sub> F  | 218753 | 1,4,5      |
| Caspase-6 Inhibitor I                             | 652.7  | Z-Trp-Glu(OMe)-Ile-Asp(OMe)-CH <sub>2</sub> F  | 218757 | 6          |
| Caspase-6 Inhibitor II                            | 500.5  | Ac-Val-Glu-Ile-Asp-CHO   | 218758 | 6          |

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|  |         |  |        |               |
|--|---------|--|--------|---------------|
| Caspase-6 Inhibitor II, Cell Permeable             | 1998.5  | Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Leu-Glu-Ile-Asp-CHO | 218767 | 6             |
| Caspase-8 Inhibitor I, Cell Permeable              | 2000.4  | Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Ile-Glu-Thr-Asp-CHO | 218773 | 8, Granzyme B |
| Caspase-8 Inhibitor II                             | 654.7   | Z-Ile-Glu(OMe)-Thr-Asp(OMe)-CH <sub>2</sub> F  | 218759 | 8, Granzyme B |
| Caspase-8 Inhibitor II in Solution                 | 654.7   |  | 218840 |               |
| Caspase-9 Inhibitor I                              | 690.7   | Z-Leu-Glu(OMe)-His-Asp(OMe)-CH <sub>2</sub> F  | 218761 | 9             |
| Caspase-9 Inhibitor I in Solution                  | 690.7   |  | 218841 |               |
| Caspase-9 Inhibitor II, Cell Permeable             | 2036.5  | Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Leu-Glu-His-Asp-CHO | 218776 | 9             |
| Caspase-9 Inhibitor III                            | 587.0   | Ac-Leu-Glu-His-Asp-CMK   | 218728 | 9             |
| Caspase-13 Inhibitor I                             | 530.5   | Ac-Leu-Glu-Glu-Asp-CHO   | 219005 | 13            |
| Caspase-13 Inhibitor II                            | 696.7   | Z-Leu-Glu(OMe)-Glu(OMe)-Asp-(OMe)-FMK  | 219009 | 13            |
| Catalase, Human Erythrocytes                       | 256,000 |  | 219008 |               |
| Caspase Inhibitor, Negative Control                | 386.4   | Z-Phe-Ala-FMK  | 342000 |               |
| Cycloheximide, High Purity                         | 281.3   |  | 239764 |               |
| Cyclosporin A, <i>Tolypocladium inflatum</i>       | 1202.6  |  | 239835 |               |
| 3,4-Dichloroisocoumarin                            | 215.0   |  | 287815 |               |
| Diisopropylfluorophosphate                         | 184.2   |  | 30967  |               |
| Disulfiram   | 296.5   |  | 322150 | 1,3           |
| DPQ  | 302.4   |  | 300270 |               |
| EMAPII Inhibitor                                   | 556.6   | Z-Ala-Ser-Thr-Asp(OMe)-CH <sub>2</sub> F   | 324678 |               |
| N-Ethylmaleimide                                   | 125.1   |  | 34115  |               |
| Genistein  | 270.2   |  | 345834 |               |
| Granzyme B Inhibitor I                             | 441.9   | Z-Ala-Ala-Asp-CH <sub>2</sub> Cl   | 368050 | 8, Granzyme B |
| Granzyme B Inhibitor II                            | 502.5   | Ac-Ile-Glu-Thr-Asp-CHO   | 368055 | 8, Granzyme B |
| Granzyme B Inhibitor IV                            | 498.5   | Ac-Ile-Glu-Pro-Asp-CHO   | 368056 | 8, Granzyme B |
| Grouo III Caspase Inhibitor I                      | 610.6   | Z-Ala-Glu-(OMe)-Val-Asp-(OMe)-CH <sub>2</sub> F  | 368620 | 6,8,9,10      |
| Grouo III Caspase Inhibitor II                     | 458.5   | Ac-Ala-Glu-Val-Asp-CHO   | 368625 |               |
| Guanosine 3', 5'-cyclic Monophosphate, Sodium Salt | 367.2   |  | 370656 |               |
| Hemoglobin, Bovine Erythrocytes                    | 64,500  |  | 3745   |               |
| Herbimycin A, <i>Streptomyces</i> sp.              | 574.7   |  | 375670 |               |

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|   |        |                                 |        |  |
|---|--------|---------------------------------|--------|--|
| IL-1 $\beta$ Inhibitor  | 593.6  |                                 | 400700 |  |
| Insulin-Like Growth Factor-I, Human, Recombinant, <i>E. coli</i>                  | 7500   |                                 | 407240 |  |
| Interleukin-1 $\beta$ , Human, Recombinant, <i>E. coli</i>                        | 17,000 |                                 | 407615 |  |
| Interleukin-6, Human, Recombinant, <i>E. coli</i>                                 | 20,300 |                                 | 407652 |  |
| Leupeptin, Hemisulfate  | 475.6  | Ac-Leu-Leu-arginal, hemisulfate | 108975 |  |
| c-myc Antisense Oligonucleotide, Sodium Salt                                      | 5165.7 |                                 | 475959 |  |
| c-myc Antisense Oligonucleotide, Negative Control, Sodium Salt                    | 5165.7 |                                 | 475961 |  |
| c-myc Antisense Oligonucleotide, Fluorescein-Labeled, Sodium Salt                 | 5741.3 |                                 | 475962 |  |
| Noxa Antisense Oligonucleotide, Sodium Salt                                       | 6754   |                                 | 492006 |  |
| Noxa Antisense Oligonucleotide, Fluorescein-Labeled, Sodium Salt                  | 7329.5 |                                 | 492009 |  |
| Noxa Antisense Oligonucleotide, Negative Control, Sodium Salt                     | 6754   |                                 | 492008 |  |
| p53 Antisense Oligonucleotide, Sodium Salt  | 6625.1 |                                 | 506140 |  |
| p53 Antisense Oligonucleotide, Fluorescein-Labeled, Sodium Salt                   | 7200.6 |                                 | 506141 |  |
| p53 Antisense Oligonucleotide, Negative Control, Sodium Salt                      | 6856   |                                 | 506142 |  |
| p53 Antisense Oligonucleotide, Negative Control, Fluorescein-Labeled, Sodium Salt | 6991.6 |                                 | 506143 |  |
| Phenylarsine Oxide  | 168.0  |                                 | 521000 |  |
| Phenylmethylsulfonil Fluoride   | 174.2  |                                 | 52332  |  |
| Phorbol-12, 13-dibutyrate   | 504.6  |                                 | 524390 |  |
| Phorbol-12-myristate-13-acetate   | 616.8  |                                 | 524400 |  |
| Pifithrin- $\alpha$   | 367.3  |                                 | 506132 |  |
| Pifithrin- $\alpha$ , Cyclic  | 349.3  |                                 | 506134 |  |
| PJ34  | 331.8  |                                 | 528150 |  |
| Puuphenone, <i>Hyrtios</i> sp.  | 328.2  |                                 | 540505 |  |
| 1-Pyrrolidinecarbodithioic Acid, Ammonium Salt                                    | 164.3  |                                 | 548000 |  |
| Spermine, Tetrahydrochloride  | 348.3  |                                 | 5677   |  |
| Sulindac  | 356.4  |                                 | 574100 |  |
| Sulindac Sulfide  | 340.4  |                                 | 574102 |  |
| Sulindac Sulfone  | 372.4  |                                 | 574105 |  |
| Superoxide Dismutase, Bovine Erythrocytes   | 32,500 |                                 | 574594 |  |
| Superoxide Dismutase, Human, Recombinant, <i>E. coli</i>                          |        |                                 | 574595 |  |
| N $\alpha$ -Tosyl-Lys Chloromethyl Ketone, Hydrochloride                          | 369.3  |                                 | 616382 |  |
| TTFA  | 222.2  |                                 | 654050 |  |
| ( $\pm$ )-Verapamil, Hydrochloride  | 491.1  |                                 | 676777 |  |

Figure 2 (page 5 of 5)



## Summary of Apoptosis Kits

| Kit Type                            | Kit No.   | Type of Sample  | Equipment Required                                 | Measures   |
|-------------------------------------|---|---|--|--|
| FragEL™                             | QIA21<br>QIA33  | Slides of frozen or fixed cells or tissue                   | Light Microscope                                   | DNA Fragmentation                                      |
| FragEL™, Fluorescent                | QIA39   | Slides of frozen or fixed cells or tissue; cell suspensions | Fluorescent Microscope or Flow Cytometer           | DNA Fragmentation                                      |
| Suicide Track™ DNA Ladder Isolation | AM41  | Cells   | Agarose Electrophoresis                            | DNA Fragmentation                                      |
| Annexin V                           | PF032<br>PF036 <sup>a</sup>   | Live/ Apoptotic Cells                                       | Flow Cytometer or Fluorescent Microscope           | Externalized Phosphoserine                             |
| Nucleosome ELISA                    | QIA25   | Cells/Cell Lysates  | Microplate Reader                                  | Free Nucleosomes                                       |
| Cell Death Detection                | QIA20   | Cell Culture Supernatants                                   | Microplate Reader                                  | Nuclear Matrix Protein 41/7                            |
| Cytochrome c Release                | QIA87   | Cells   | Immunoblotting Equipment, Homogenizer              | Cytochrome c translocated from mitochondria to cytosol |
| Cytochrome c ELISA                  | QIA74   | Cell Lysates  | Microplate Reader                                  | Cytochrome c   |
| MitoCapture™                        | 475866  | Live/Apoptotic Cells  | Flow Cytometer or Fluorescent Microscope           | Mitochondrial Membrane Potential                       |
| Glutathione                         | QIA89   | Cells   | Fluorescent Plate Reader or Fluorescent Microscope | Glutathione  |
| Caspase Flow Cytometric             | QIA78   | Intact Cells  | Flow Cytometer or Fluorescent Microscope           | General Caspase Activity                               |
| Caspase-3, Intracellular            | 235430<br>235432  | Intact Cells  | Flow Cytometer or Fluorescent Microscope           | Caspase-3 Activity                                     |
| Caspase Assays, Fluorometric        | 218791 (Caspase-1)<br>218793 (Caspase-2)<br>QIA70 (Caspase-3)<br>HTS02 (Caspase-3)<br>218801 (Caspase-5)<br>218803 (Caspase-6)<br>QIA71 (Caspase-8)<br>HTS03 (Caspase-8)<br>QIA72 (Caspase-9)<br>HTS04 (Caspase-9)<br>218811 (Caspase-10) | Cell Lysates  | Fluorescent Microplate Reader                      | Caspase Activity                                       |
| Caspase Assays, Colorimetric        | 218790 (Caspase-1)<br>218734 (Caspase-1)<br>218792 (Caspase-2)<br>235419 (Caspase-3)<br>235418 (Caspase-3)<br>218801 (Caspase-5)<br>218802 (Caspase-6)<br>218824 (Caspase-9)<br>218810 (Caspase-10)                                       | Cell Lysates  | Microplate Reader                                  | Caspase Activity                                       |

a. Requires labeled streptavidin to be supplied by the user.

Figure 3

Title: SCREENING METHODS TO IDENTIFY  
TREATMENTS FOR AUTOIMMUNE DISEASE

Applicant(s): Denise Faustman

Filing Date: 11/14/03

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| Product Name  | Mol. Wt. | Sequence  | Known Target<br>Caspases | Cat. No. | Size           |
|---|----------|---|--------------------------|----------|----------------|
| Acridine Orange   | 301.8    |   |                          | 113000   | 500 mg,<br>1 g |
| 7-Amino-4-methylcoumarin  | 175.2    |   |                          | 164545   | 10 mg          |
| 7-Amino-4-(trifluoromethyl)coumarin                             | 229.2    |   |                          | 164580   | 50 mg          |
| Caspase Active Site Peptide                                     | 688.8    |   |                          | 235416   | 5 mg           |
| Caspase Substrate I, Fluorogenic                                | 648.6    | Val-Ala-Asp-AFC                                       | 1,3,4,7                  | 218743   | 5 mg           |
| Caspase Substrate Set I, Colorimetric                           |          |   | 1,3,6                    | 218780   | 1 set          |
| Caspase Substrate Set II, Fluorogenic                           |          |   | 1,2,3,4,5,6,9            | 218782   | 1 set          |
| <b>New</b> Caspase Substrate Set III, Colorimetric              |          |   |                          | 218808   | 1 set          |
| <b>New</b> Caspase Substrate Set IV, Fluorogenic                |          |   |                          | 218809   | 1 set          |
| Caspase-1 Substrate I   | 1584.7   | H-Asn-Glu-Ala-Tyr-Val-His-Asp                         | 1,4                      | 400016   | 1 mg           |
| Caspase-1 Substrate II, Fluorogenic                             | 1233.4   | DABCYL, Tyr-Val-Ala-Asp-Ala-Pro-Val-EDANS             | 1,4                      | 400018   | 500 µg         |
| Caspase-1 Substrate III, Fluorogenic                            | 665.7    | Ac-Tyr-Val-Ala-Asp-AMC                                | 1,4                      | 400020   | 1 mg<br>5 mg   |
| Caspase-1 Substrate IV, Colorimetric                            | 628.6    | Ac-Tyr-Val-Ala-Asp-pNA                                | 1,4                      | 400025   | 5 mg           |
| Caspase-1 Substrate V, Fluorogenic                              | 1145.1   | MCA-Tyr-Val-Ala-Asp-Ala-Pro-Lys(DNP)-OH               | 1,4                      | 400017   | 1 mg           |
| Caspase-1 Substrate VI, Fluorogenic                             | 811.8    | Z-Tyr-Val-Ala-Asp-AFC                                 | 1,4                      | 688225   | 1 mg<br>5 mg   |
| Caspase-1 Substrate VII, Colorimetric                           | 747.7    | Ac-Trp-Glu-His-Asp-pNA                                | 1,4,5                    | 218736   | 5 mg           |
| Caspase-1 Substrate VIII, Fluorogenic                           | 1277.3   |   | 1                        | 218737   | 1 mg           |
| Caspase-1 Substrate IX, Fluorogenic                             | 1144.2   | MCA-Tyr-Val-Ala-Asp-Ala-Pro-Lys-(DNP)-NH <sub>2</sub> | 1                        | 218738   | 1 mg           |
| Caspase-1 Substrate X, Fluorogenic                              | 784.8    | Ac-Trp-Glu-His-Asp-AMC                                | 1                        | 218739   | 5 mg           |
| Caspase-1 Substrate XI, Fluorogenic                             | 1318.3   | FITC-Tyr-Val-Ala-Asp-Ala-Pro-Lys-(DNP)-OH             | 1                        | 218795   | 1 mg           |
| Caspase-1 Substrate XI, Standard                                | 855.9    | FITC-Tyr-Val-Ala-Asp-OH                               | 1                        | 218796   | 1 mg           |
| <b>New</b> Caspase-1 Substrate XII, Fluorogenic                 | 719.7    | Ac-Tyr-Val-Ala-Asp-AFC                                | 1                        | 688224   | 5 mg           |
| <b>New</b> Caspase-1 Substrate XIV, Water-Soluble, Colorimetric | 747.7    | Ac-Trp-Glu-His-Asp-pNA                                | 1,4,5                    | 218822   | 5 mg           |
| <b>New</b> Caspase-1/Caspase-4 Substrate I, Fluorogenic         | 754.8    | Ac-Trp-Glu-Ala-Asp-AMC                                | 1,4                      | 400005   | 1 mg<br>5 mg   |

Figure 3

Title: SCREENING METHODS TO IDENTIFY  
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Applicant(s): Denise Faustman

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| Product Name  | Mol. Wt. | Sequence  | Known Target<br>Caspases | Cat. No. | Size         |
|---|----------|---|--------------------------|----------|--------------|
| Caspase-1/Caspase-4 Substrate II, Fluorogenic                       | 688.7    | Ac-Trp-Glu-Ala-Asp-AMC  | 1,4                      | 400006   | 1 mg<br>5 mg |
| Caspase-1/Caspase-4 Substrate III,<br>Colorimetric                  | 681.7    | Ac-Trp-Glu-Ala-Asp-pNA  | 1,4                      | 400007   | 5 mg         |
| Caspase-1/Caspase-4 Substrate IV,                                   | 651.7    | Ac-Trp-Val-Ala-Asp-pNA  | 1,4                      | 400008   | 5 mg         |
| Caspase-2 Substrate I, Fluorogenic                                  | 862.8    | Z-Val-Asp-Val-Ala-Asp-AFC                                     | 2                        | 218740   | 1 mg<br>5 mg |
| Caspase-2 Substrate II, Fluorogenic                                 | 1270.3   | MCA-Val-Asp-Val-Ala-Asp-<br>Gly-Trp-Lys-(DNP)-NH <sub>2</sub> | 2                        | 218741   | 1 mg         |
| <b>NEW</b> Caspase-2 Substrate III, Fluorogenic                     | 714.7    | MCA-Val-Asp-Val-Ala-Asp-<br>Gly-Trp-Lys-(DNP)-NH <sub>2</sub> | 2                        | 218815   | 5 mg         |
| <b>NEW</b> Caspase-2 Substrate IV, Colorimetric                     | 680.7    | Ac-Val-Asp-Val-Ala-Asp-pNA                                    | 2                        | 218820   | 5 mg         |
| <b>NEW</b> Caspase-2 Substrate V, Fluorogenic                       | 776.8    | Ac-Leu-Asp-Glu-Ser-Asp-AMC                                    | 2                        | 218818   | 1 mg<br>5 mg |
| Caspase-3 Substrate I, Colorimetric                                 | 638.6    | Ac-Asp-Glu-Val-Asp-pNa  | 3,6,7,8,10               | 235400   | 5 mg         |
| Caspase-3 Substrate II, Fluorogenic                                 | 675.6    | Ac-Asp-Glu-Val-Asp-AMC  | 3,6,7,8,10               | 235425   | 1 mg<br>5 mg |
| Caspase-3 Substrate III, Fluorogenic                                | 1155.1   | MCA-Asp-Glu-Val-Asp-Ala-<br>Pro-Lys(DNP)-OH                   | 3,6,7,8,10               | 235426   | 1 mg         |
| Caspase-3 Substrate IV, Fluorogenic                                 | 821.7    | Z-Asp-Glu-Val-Asp-AFC   | 3,6,7,8,10               | 264150   | 1 mg<br>5 mg |
| Caspase-3 Substrate V, Fluorogenic                                  | 1359.4   | MCA-Val-Asp-Gln-Met-Asp-<br>Gly-Trp-Lys-(DNP)-NH <sub>2</sub> | 3                        | 218751   | 1 mg         |
| Caspase-3 Substrate VI, Fluorogenic                                 | 1213.2   | MCA-Asp-Glu-Val-Asp-Ala-Arg-<br>Lys-(DNP)-NH <sub>2</sub>     | 3,6,7,8,10               | 218752   | 1 mg         |
| Caspase-3 Substrate VII, Fluorogenic                                | 728.6    | Ac-Asp-Glu-Val-Asp-AFC  | 3,6,7,8,10               | 264151   | 1 mg<br>5 mg |
| <b>NEW</b> Caspase-3 Substrate VIII, Water-Soluble,<br>Colorimetric | 638.6    | Ac-Asp-Glu-Val-Asp-pNA  | 3,6,7,8,10               | 218823   | 5 mg         |
| Caspase-4 Substrate I, Fluorogenic                                  | 1227.3   | MCA-Leu-Glu-Val-Asp-Gly-Trp-<br>Lys-(DNP)-NH <sub>2</sub>     | 4                        | 218756   | 1 mg         |
| Caspase-4 Substrate II, Fluorogenic                                 | 727.7    | Ac-Leu-Glu-Val-Asp-AFC  | 4                        | 218748   | 1 mg<br>5 mg |
| Caspase-5 Substrate II, Fluorogenic                                 | 838.8    | Ac-Trp-Glu-His-Asp-AFC  | 1,4,5                    | 218754   | 1 mg<br>5 mg |
| Caspase-6 Substrate I, Fluorogenic                                  | 673.7    | Ac-Val-Glu-Ile-Asp-AMC  | 6                        | 218760   | 5 mg         |
| Caspase-6 Substrate II, Colorimetric                                | 636.7    | Ac-Val-Glu-Ile-Asp-pNA  | 6                        | 218762   | 5 mg         |
| Caspase-6 Substrate III, Fluorogenic                                | 819.8    | Z-Val-Glu-Ile-Asp-AFC   | 6                        | 218763   | 5 mg         |
| Caspase-6 Substrate V, Fluorogenic                                  | 751.7    | Ac-Val-Glu-His-Asp-AFC  | 6,9,10                   | 218788   | 1 mg<br>5 mg |
| Caspase-6 Substrate VI, Fluorogenic                                 | 744.8    | Ac-Val-Lys-Met-Asp-AFC  | 6                        | 218789   | 1 mg<br>5 mg |
| Caspase-6 Substrate VII, Fluorogenic                                | 712.7    | Ac-Val-Asn-Leu-Asp-AFC  | 6                        | 219003   | 1 mg<br>5 mg |

Figure 3

| Product Name                                       | Mol. Wt. | Sequence  | Known Target<br>Caspases | Cat. No. | Size         |
|--|----------|---|--------------------------|----------|--------------|
| Caspase-7 Substrate I, Fluorogenic                 | 1327.3   | MCA-Val-Asp-Gln-Val-Asp-Gly-<br>Trp-Lys-(DNP)-NH <sub>2</sub> | 7                        | 218768   | 1 mg         |
| Caspase-9 Substrate I, Fluorogenic                 | 765.7    | Ac-Leu-Glu-His-Asp-AFC  | 4,5,9                    | 218765   | 1 mg<br>5 mg |
| Caspase-13 Substrate I, Colorimetric               | 666.6    | Ac-Leu-Glu-Glu-Asp-pNA  | 13                       | 219006   | 5 mg         |
| <b>New</b> DRONC Substrate I, Fluorogenic          | 730.7    | Ac-Thr-Gln-Thr-Glu-AFC  |                          | 287990   | 1 mg<br>5 mg |
| DRONC Substrate II, Fluorogenic                    | 716.6    | Ac-Thr-Gln-Thr-Asp-AFC  |                          | 287995   | 1 mg<br>5 mg |
| <b>New</b> DRONC Substrate III, Fluorogenic        | 786.7    | Ac-Gly-Ile-Glu-Thr-Asp-AFC                                    |                          | 287996   | 1 mg<br>5 mg |
| <b>New</b> DRONC Substrate IV, Fluorogenic         | 716.8    | Ac-Val-Asp-Val-Ala-Asp-AMC                                    |                          | 287997   | 1 mg<br>5 mg |
| <b>New</b> D <sub>2</sub> R                        | 560.5    |   |                          | 251300   | 1 mg         |
| <b>New</b> (DMe) <sub>2</sub> R                    | 588.6    |   |                          | 251305   | 1 mg         |
| Granzyme B Enzyme Overlay Membrane                 |          | Z-Ala-Ala-Asp-AFC   | 8, Granzyme B            | 368045   | 1 sheet      |
| Granzyme B Substrate I, Colorimetric               | 638.6    | Ac-Ile-Glu-Thr-Asp-AFC  | 8, Granzyme B            | 368057   | 5 mg         |
| Granzyme B Substrate II, Fluorogenic               | 821.8    | Z-Ile-Glu-Thr-Asp-AFC   | 8, Granzyme B            | 368059   | 1 mg<br>5 mg |
| Granzyme B Substrate IV                            | 481.6    | Boc-Ala-Ala-Asp-S-benzyl                                      | 8, Granzyme B            | 368063   | 5 mg         |
| <b>New</b> Granzyme B Substrate VI                 | 827.9    | Ac-Ile-Glu-Pro-Asp-Trp-Gly-<br>Ala-NH <sub>2</sub>            | Granzyme B               | 368065   | 5 mg         |
| <b>New</b> Granzyme B Substrate VII                | 884.9    | Ac-Ile-Glu-Pro-Asp-Trp-Asn-<br>Ala-NH <sub>2</sub>            | Granzyme B               | 368066   | 5 mg         |
| <b>New</b> Granzyme B Substrate VIII, Colorimetric | 634.6    | Ac-Ile-Glu-Pro-Asp-pNA  | Granzyme B               | 368067   | 5 mg         |
| <b>New</b> Granzyme B Substrate IX, Fluorogenic    | 671.7    | Ac-Ile-Glu-Pro-Asp-AMC  | Granzyme B               | 368068   | 1 mg<br>5 mg |
| <b>New</b> Granzyme B Substrate X, Fluorogenic     | 725.0    | Ac-Ile-Glu-Pro-Asp-AMC  |                          | 368062   | 5 mg         |
| p-Nitroaniline                                     | 138.1    |   |                          | 483350   | 50 g         |

Figure 3

Title: SCREENING METHODS TO IDENTIFY  
TREATMENTS FOR AUTOIMMUNE DISEASE

Applicant(s): Denise Faustman

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| Product Name  | Mol. Wt. | Cat. No. | Size                           |
|---|----------|----------|--------------------------------|
| A23187, Free Acid, <i>Streptomyces chartreusensis</i>               | 523.6    | 100105   | 1 mg<br>5 mg<br>10 mg<br>50 mg |
| A23187, Mixed Calcium-Magnesium Salt                                |          | 100106   | 10 mg                          |
| N-Acetyl-L-cysteine   | 163.2    | 106425   | 5 g                            |
| Actinomycin D, <i>Streptomyces</i> sp.                              | 1255.5   | 114666   | 1 set<br>5 mg                  |
| Actinomycin D, 7-Amino-   | 1270.4   | 129935   | 1 mg                           |
| AG 17   | 282.4    | 658425   | 5 mg                           |
| AG 82   | 202.2    | 658400   | 5 mg                           |
| AG 490  | 294.3    | 658401   | 5 mg                           |
| AG 1714   | 199.2    | 121780   | 25 mg                          |
| Anandamide  | 347.5    | 172100   | 5 mg                           |
| Anisomycin, <i>Streptomyces griseolus</i>                           | 265.3    | 176880   | 10 mg                          |
| Aphidicolin   | 338.5    | 178273   | 1 mg                           |
| <b>NEW</b> Apoptosis Inducer Set I                                  |          | 178486   | 1 set                          |
| <b>NEW</b> Apoptosis Inducer Set II                                 |          | 178489   | 1 set                          |
| Bafilomycin A1, <i>Streptomyces griseus</i>                         | 622.8    | 196000   | 10 µg                          |
| <b>NEW</b> Bak BH3 Fusion Peptide, Cell-Permeable                   | 4404.2   | 196350   | 500 µg                         |
| <b>NEW</b> Bak BH3 Fusion Peptide, Cell-Permeable, Negative Control | 4362.2   | 196355   | 500 µg                         |
| <b>NEW</b> Bcl-2 Binding Peptide, Cell-Permeable                    | 3399.9   | 197220   | 1 mg                           |
| <b>NEW</b> Bcl-2 Binding Peptide, Cell-Permeable, Negative Control  | 3357.8   | 197225   | 1 mg                           |
| Berberine, Hemisulfate  | 384.4    | 200400   | 1 g                            |
| Betulinic Acid  | 456.7    | 200498   | 5 mg                           |
| Bleomycin Sulfate, <i>Streptomyces verticillus</i>                  |          | 203401   | 15 U                           |
| <b>NEW</b> CAFdA  | 303.7    | 205500   | 1 mg                           |
| Calphostin C, <i>Cladosporium cladosporioides</i>                   | 790.8    | 208725   | 50 µg<br>100 µg                |
| Camptothecin, <i>Camptotheca acuminata</i>                          | 348.4    | 208925   | 50 mg                          |
| CAPE  | 284.3    | 211200   | 25 mg                          |
| Chelerythrine Chloride  | 383.8    | 220285   | 5 mg                           |

Figure 4

| Product Name  | Mol. Wt. | Cat. No. | Size                    |
|---|----------|----------|-------------------------|
| 2-Chloro-2'-deoxyadenosine                                    | 285.7    | 220467   | 10 mg                   |
| 2-Chloro-2'-deoxyadenosine 5'-Triphosphate, Tetralithium Salt | 549.4    | 220469   | 1 mg                    |
| Colcemid  | 371.4    | 234109   | 5 mg                    |
| Colchicine, <i>Colchicum autumnale</i>                        | 399.4    | 234115   | 1 g<br>5 g              |
| Corticosterone  | 346.5    | 235135   | 1 g                     |
| Cycloheximide   | 281.3    | 239763   | 1 g<br>5 g              |
| <b>New</b> Cycloheximide, High Purity                         | 281.3    | 239764   | 100 mg<br>1 g           |
| Cyclophosphamide Monohydrate                                  | 279.1    | 239785   | 1 g                     |
| Cyclosporin A, <i>Tolypocladium inflatum</i>                  | 1202.6   | 239835   | 100 mg                  |
| Daunorubicin, Hydrochloride                                   | 564.0    | 251800   | 5 mg                    |
| Dexamethasone   | 392.5    | 265005   | 100 mg                  |
| <b>New</b> 2,3-Dichloro-5,8-dihydroxy-1,4-naphthoquinone      | 259.1    | 287805   | 50 mg                   |
| 3,3'-Diindolylmethane   | 246.3    | 309900   | 100 mg                  |
| <b>New</b> Dolastatin 15                                      | 837.1    | 320900   | 1 mg                    |
| Doxorubicin, Hydrochloride                                    | 580.0    | 324380   | 10 mg                   |
| (-)-Epigallocatechin Gallate                                  | 458.4    | 324880   | 10 mg                   |
| Erbstatin Analog  | 194.2    | 324930   | 1 mg                    |
| Etoposide   | 588.6    | 341205   | 25 mg                   |
| Etoposide Phosphate   | 668.6    | 341206   | 5 mg                    |
| ET-18-OCH <sub>3</sub>  | 523.7    | 341207   | 5 mg                    |
| 5-Fluorouracil  | 130.1    | 343922   | 1 g                     |
| Folimycin, <i>Streptomyces</i> sp.                            | 866.1    | 344085   | 10 µg                   |
| Forskolin, <i>Coleus forskohlii</i>                           | 410.5    | 344270   | 10 mg<br>25 mg<br>50 mg |
| H-7, Dihydrochloride  | 364.3    | 371955   | 1 mg<br>5 mg            |
| Genistein   | 270.2    | 345834   | 20 mg<br>50 mg          |
| <b>New</b> [6]-Gingerol, <i>Zingiber officinale</i>           | 294.4    | 345868   | 5 mg                    |
| Glycodeoxycholic Acid, Sodium Salt                            | 471.6    | 361311   | 5 g                     |
| H-7, Dihydrochloride  | 364.3    | 371955   | 1 mg<br>5 mg            |
| H-89, Dihydrochloride   | 519.3    | 371963   | 1 mg                    |

Figure 4  
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Title: SCREENING METHODS TO IDENTIFY  
TREATMENTS FOR AUTOIMMUNE DISEASE

Applicant(s): Denise Faustman

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| Product Name   | Mol. Wt. | Cat. No. | Size                           |
|--|----------|----------|--------------------------------|
| <b>NEW</b> HA14-1  | 409.2    | 371971   | 1 set<br>2 mg                  |
| Harringtonine, <i>Cephalotaxus hainanensis</i>                 | 531.6    | 372125   | 5 mg                           |
| Homoharringtonine, <i>Cephalotaxus hainanensis</i>             | 545.6    | 384500   | 5 mg                           |
| HMBA   | 200.3    | 387750   | 500 mg                         |
| 4-Hydroxynonenal   | 156.2    | 393204   | 1 mg                           |
| 4-Hydroxyphenylretinamide                                      | 391.6    | 390900   | 5 mg                           |
| Hydroxyurea  | 76.1     | 400046   | 5 g                            |
| <b>NEW</b> Indanocine  | 339.4    | 402080   | 1 mg                           |
| Ionomycin, Free Acid, <i>Streptomyces conglobatus</i>          | 709.0    | 407950   | 1 mg<br>5 mg<br>10 mg          |
| Ionomycin, Calcium Salt, <i>Streptomyces conglobatus</i>       | 747.1    | 407952   | 1 mg<br>5 mg<br>10 mg<br>25 mg |
| <b>NEW</b> Kaempferol  | 286.2    | 420345   | 25 mg                          |
| KN-93  | 501.0    | 422708   | 1 mg<br>5 mg                   |
| <b>NEW</b> Licochalcone-A, Synthetic                           | 338.4    | 435800   | 10 mg<br>50 mg                 |
| Methotrexate   | 454.5    | 454125   | 100 mg                         |
| Mitomycin C, <i>Streptomyces caespitosus</i>                   | 334.3    | 47589    | 2 mg                           |
| Mitomycin C, <i>Streptomyces caespitosus</i> ,<br>Carrier-Free | 334.3    | 475820   | 10 mg                          |
| <b>NEW</b> MT-21   | 281.4    | 475952   | 10 mg                          |
| <b>NEW</b> MT-21, Negative Control                             | 169.2    | 475953   | 5 mg                           |
| <b>NEW</b> Muristerone A, <i>Ipomoea</i> spp.                  | 496.6    | 475946   | 1 mg                           |
| (±)-S-Nitroso-N-acetylpenicillamine                            | 220.2    | 487910   | 1 set<br>20 mg                 |
| S-Nitrosoglutathione   | 336.3    | 487920   | 1 set<br>10 mg<br>50 mg        |
| Okadaic Acid, <i>Prorocentrum concavum</i>                     | 805.0    | 495604   | 10 µg<br>25 µg<br>100 µg       |
| Oligomycin   |          | 495455   | 10 mg                          |
| <b>NEW</b> p53 Activator, Cell-Permeable                       | 4434.1   | 506131   | 500 µg                         |
| Paclitaxel, <i>Taxus</i> sp.                                   | 853.9    | 580555   | 5 mg<br>25 mg<br>100 mg        |

Figure 4

Title: SCREENING METHODS TO IDENTIFY  
TREATMENTS FOR AUTOIMMUNE DISEASE

Applicant(s): Denise Faustman

Filing Date: 11/14/03

Serial No.:

Page 15 of 37 Customer No.: 21559

| Product Name   | Mol. Wt. | Cat. No. | Size                           |
|--|----------|----------|--------------------------------|
| Phorbol-12-myristate-13-acetate                                | 616.8    | 524400   | 1 mg<br>5 mg<br>10 mg<br>25 mg |
| (Pivaloyloxy)methyl Butyrate                                   | 202.3    | 527998   | 25 mg                          |
| Puromycin, Dihydrochloride                                     | 544.4    | 540222   | 25 mg<br>100 mg                |
| 1-Pyrrolidinecarbodithioic Acid,<br>Ammonium Salt              | 164.3    | 548000   | 100 mg                         |
| Quercetin, Dihydrate   | 338.3    | 551600   | 100 mg                         |
| Rapamycin  | 914.2    | 553210   | 100 µg<br>1 mg                 |
| <b>New</b> (-)-Reveromycin B, Synthetic                        | 660.8    | 554719   | 50 µg                          |
| <b>New</b> Scriptaid   | 326.4    | 565730   | 5 mg                           |
| <b>New</b> Smac-N7 Peptide                                     | 725.9    | 567370   | 1 mg<br>5 mg                   |
| <b>New</b> Smac-N7 Peptide, Cell-Permeable                     | 3051.7   | 567375   | 1 mg                           |
| Sodium Butyrate  | 110.1    | 567430   | 250 mg                         |
| Sodium 4-Phenylbutyrate  | 186.2    | 567616   | 100 mg                         |
| Spermine, Tetrahydrochloride                                   | 348.3    | 5677     | 5 g                            |
| D-erythro-Sphingosine, Free Base,<br>Bovine Brain              | 299.5    | 567725   | 10 mg                          |
| D-erythro-Sphingosine, Free Base,<br>Bovine Brain, High Purity | 299.5    | 567726   | 10 mg                          |
| D-erythro-Sphingosine, N-Acetyl-                               | 341.5    | 110145   | 5 mg                           |
| D-erythro-Sphingosine, N,N-Dimethyl-                           | 327.6    | 310500   | 5 mg                           |
| D-erythro-Sphingosine, N-Hexanoyl-                             | 397.6    | 376650   | 5 mg                           |
| D-erythro-Sphingosine, N-Octanoyl-                             | 425.7    | 219540   | 5 mg                           |
| Staurosporine, <i>Streptomyces</i> sp.                         | 466.5    | 569397   | 100 µg<br>250 µg               |
| <b>New</b> Sulfasalazine                                       | 398.4    | 573500   | 100 mg                         |
| Sulindac   | 356.4    | 574100   | 1 g                            |
| Tamoxifen Citrate  | 563.7    | 579000   | 100 mg                         |
| Tamoxifen, 4-Hydroxy-, (Z)-                                    | 387.5    | 579002   | 5 mg                           |
| Sulindac Sulfide   | 340.4    | 574102   | 5 mg                           |
| Thapsigargin   | 650.8    | 586005   | 1 mg                           |
| α-Toxin, <i>Staphylococcus aureus</i>                          | 33,000   | 616385   | 250 µg                         |
| <b>New</b> TRAIL, Human, Recombinant, <i>E. coli</i>           | 23,000   | 616375   | 100 µg                         |
| Trichostatin A, <i>Streptomyces</i> sp.                        | 302.4    | 647925   | 1 mg                           |

Figure 4



| Product Name                                 | Mol. Wt. | Cat. No. | Size            |
|--|----------|----------|-----------------|
| <b>New</b> O-Trensox                         | 899.9    | 499300   | 10 mg           |
| <b>New</b> Topotecan, Hydrochloride          | 457.9    | 614800   | 1 mg            |
| Valinomycin, <i>Streptomyces fulvissimus</i> | 1111.3   | 676377   | 25 mg<br>100 mg |
| (±)-Verapamil, Hydrochloride                 | 491.1    | 676777   | 100 mg          |
| Veratridine                                  | 673.8    | 676950   | 5 mg            |
| Vicenistatin                                 | 500.7    | 676790   | 500 µg          |
| Vitamin D <sub>3</sub> , 1α,25-Dihydroxy-    | 416.7    | 679101   | 50 µg           |
| Vitamin E Succinate                          | 530.8    | 679130   | 100 mg          |

| AGENT                    | DOSE         | SOLVENT FOR STOCK SOLUTION | CAT. NO. |
|--------------------------|--------------|----------------------------|----------|
| Actinomycin D            | 500 ng/ml    | Methanol                   | 114666   |
| Aphidocolin              | 2 µg/ml      | DMSO                       | 378273   |
| A23187                   | 10 µg        | DMSO                       | 100105   |
| Caffeine                 | 16 mM        | Boiling H <sub>2</sub> O   | 205548   |
| Camptothecin             | 4 µg/ml      | DMSO                       | 208925   |
| Cycloheximide            | 100 µg/ml    | H <sub>2</sub> O           | 239764   |
| Dexamethasone            | 1 µM         | Ethanol                    | 265005   |
| Doxorubicin (Adriamycin) | 0.2 µg/ml    | H <sub>2</sub> O           | 324380   |
| 5-Fluorouracil           | 25 µg/ml     | DMSO, Hot H <sub>2</sub> O | 343922   |
| Hydroxyurea              | 500 nM       | H <sub>2</sub> O           | 400046   |
| Paclitaxel (TAXOL)       | 100 - 580 nM | DMSO                       | 580555   |
| Staurosporine            | 500 nM       | DMSO                       | 569397   |
| Thymidine                | 2 mM         | PBS                        | 6060     |
| Vinblastine              | 60 nM        | Methanol                   | 627175   |

FIG. 5

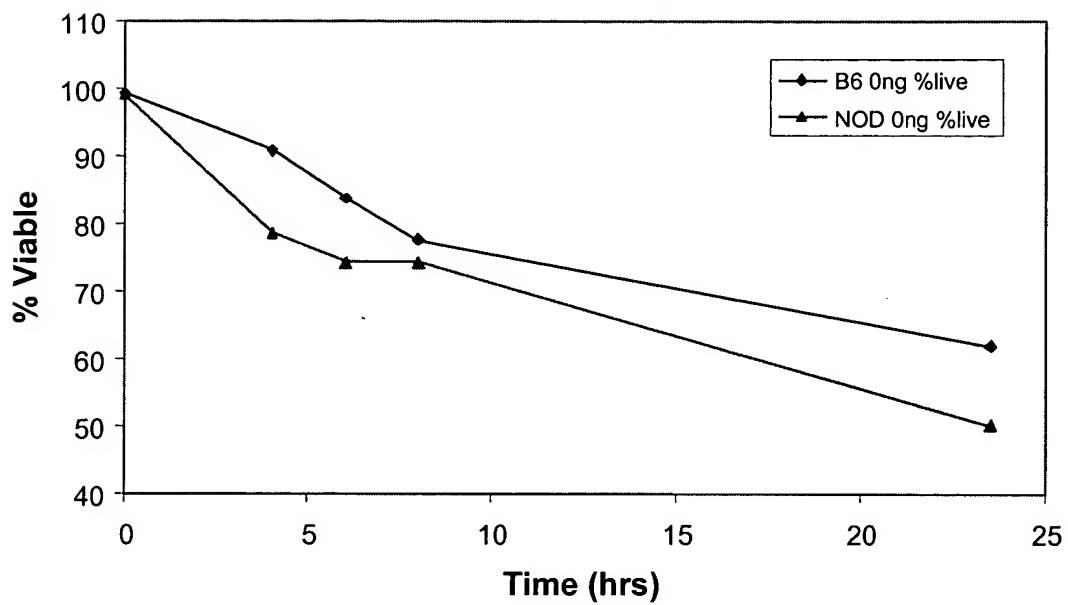


FIG. 6

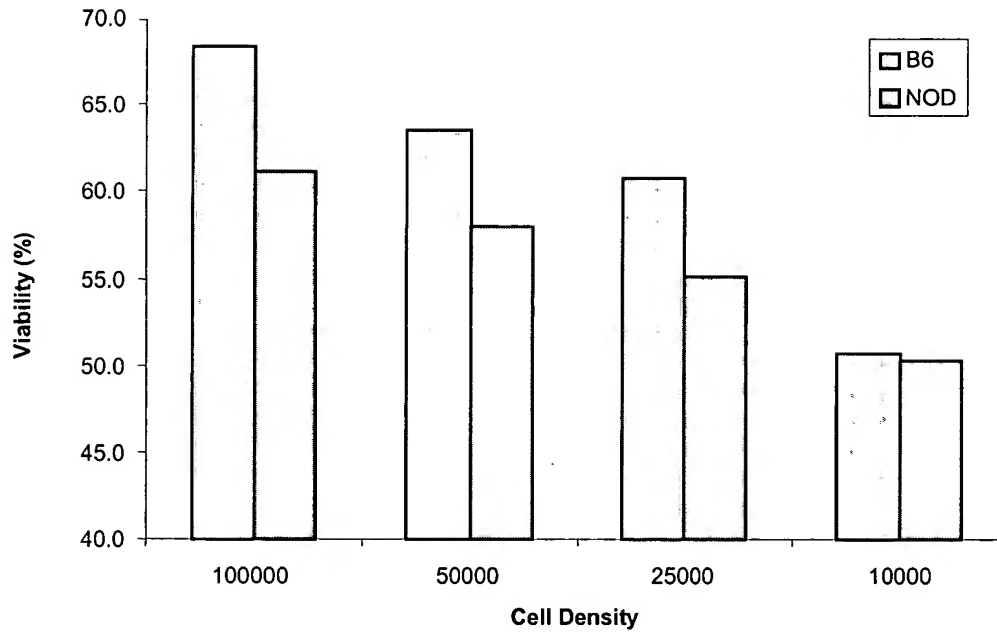


FIG. 7

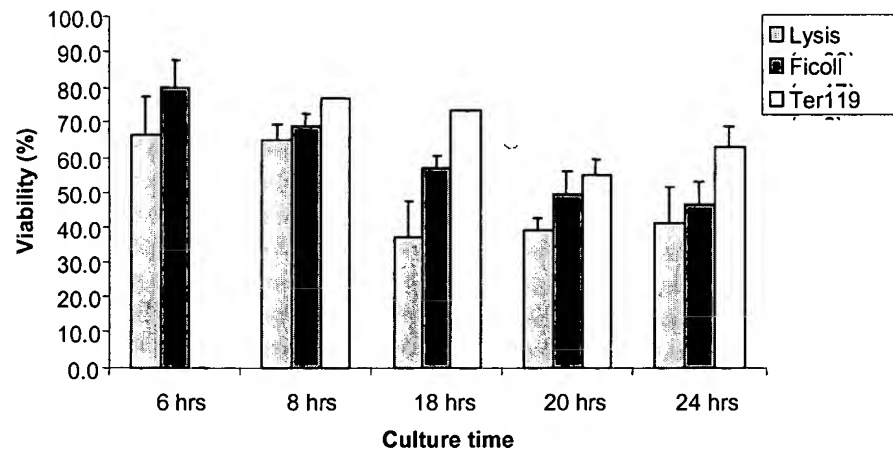


FIG. 8

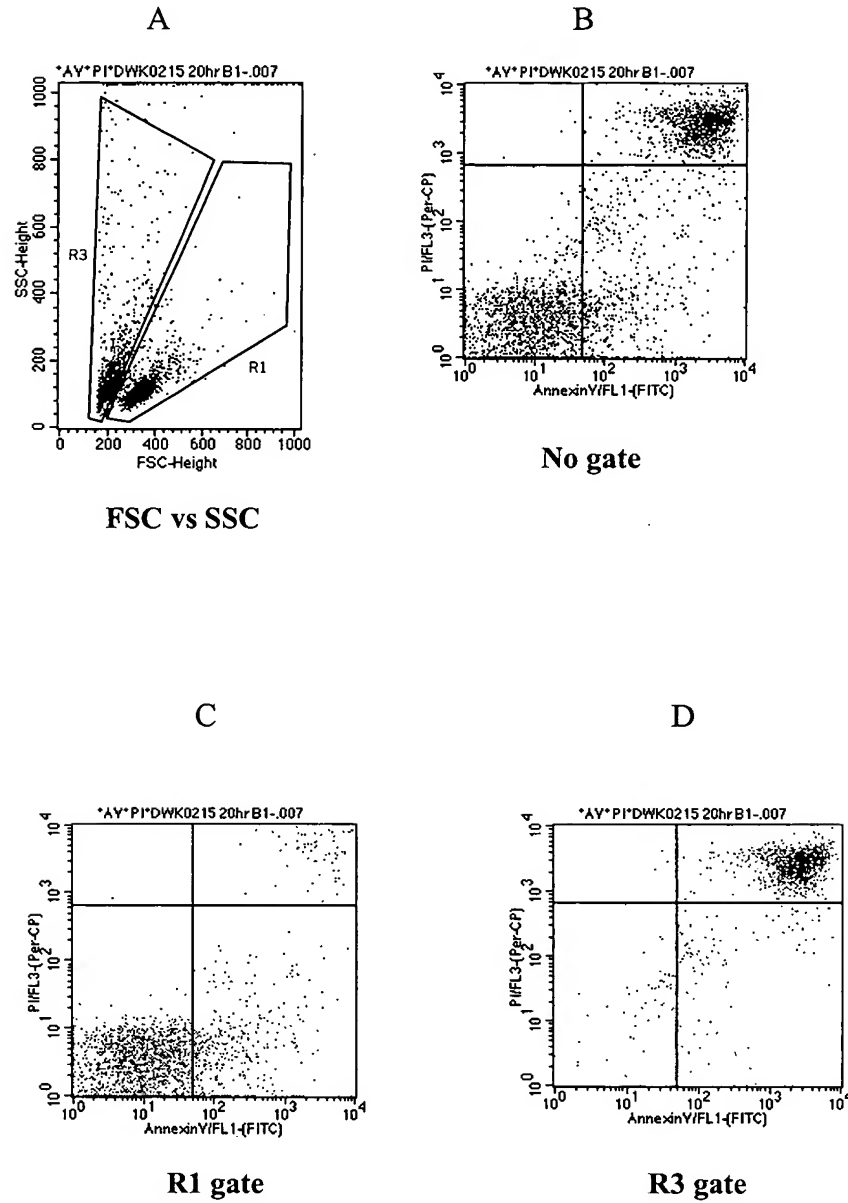


FIG. 9A

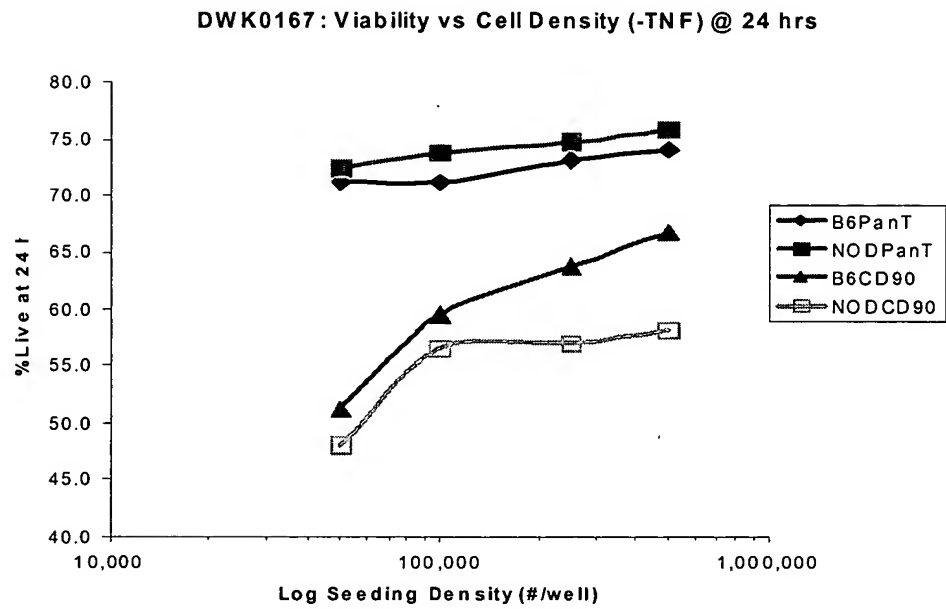


FIG. 9B

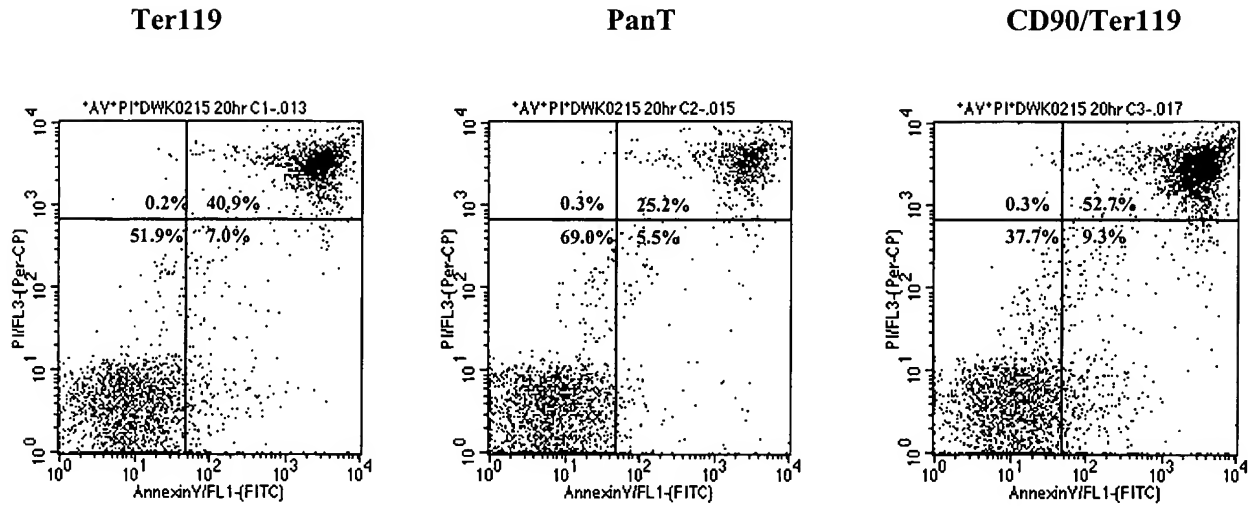




FIG. 10

UR Quadrant

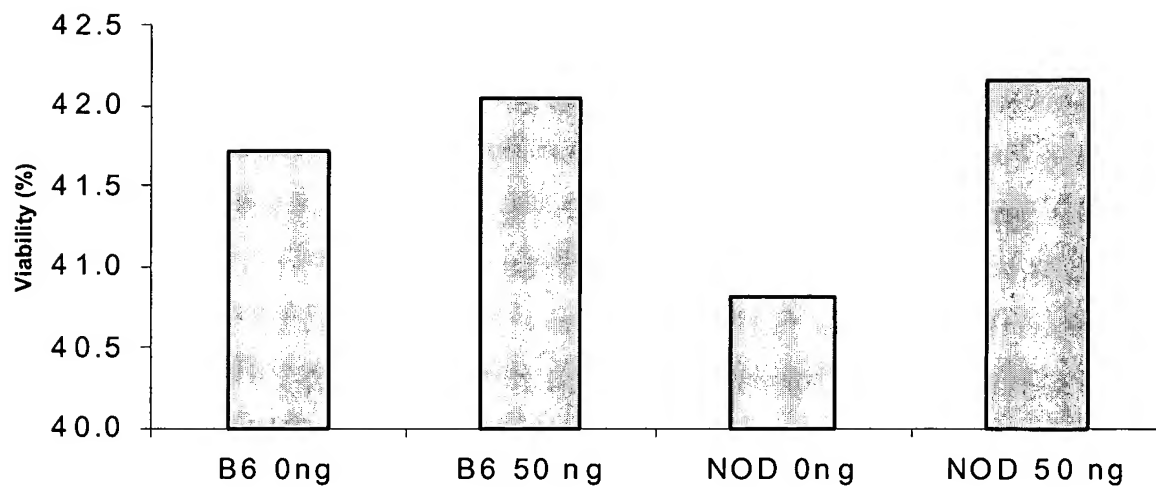


FIG. 11

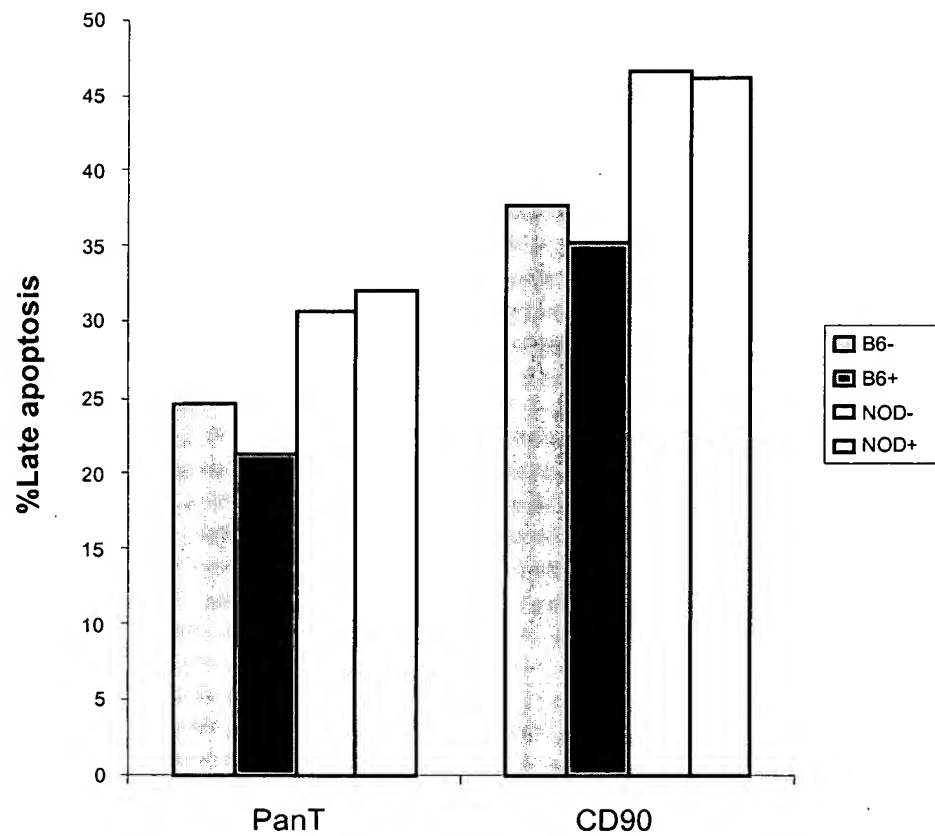


FIG. 12

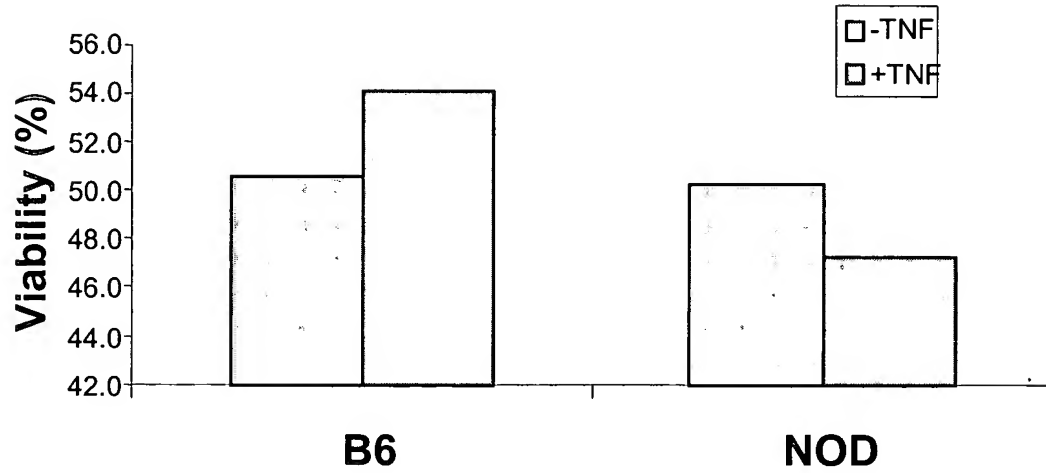


FIG. 13

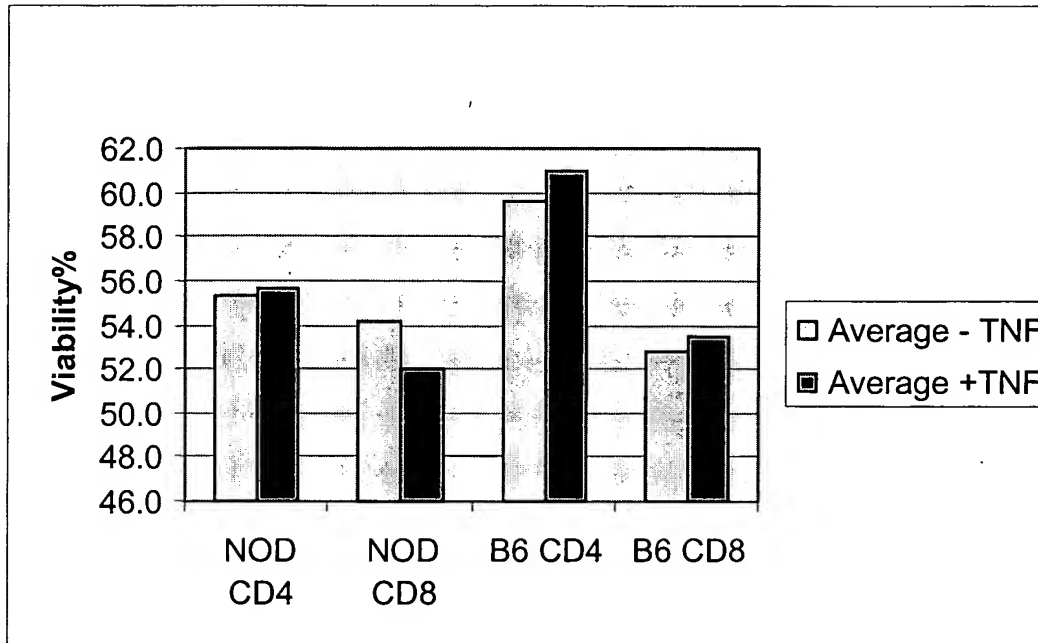


Figure 14A

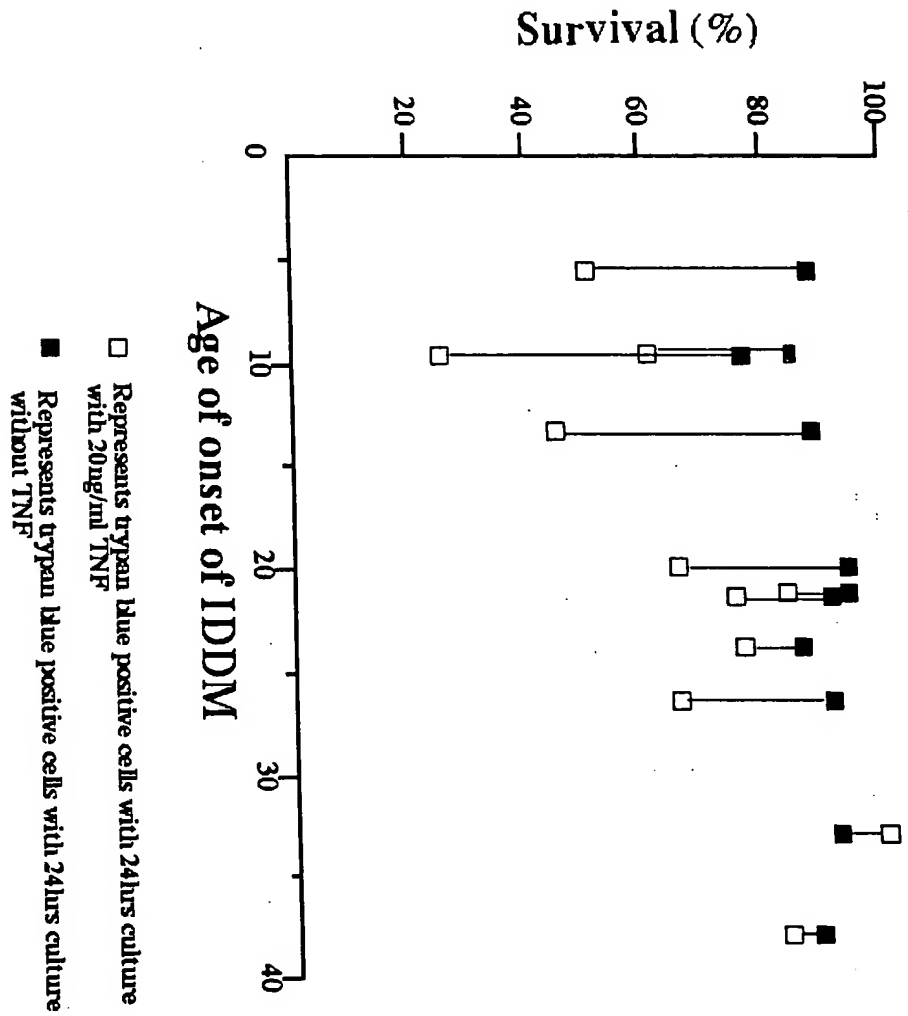


Figure 14B

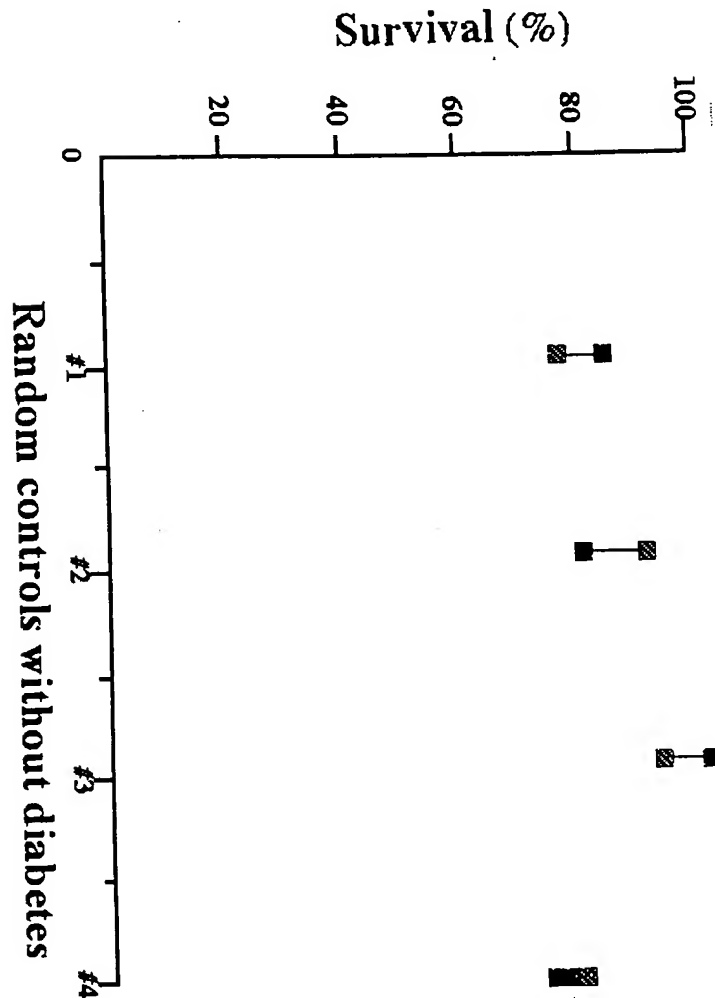


Figure 14C

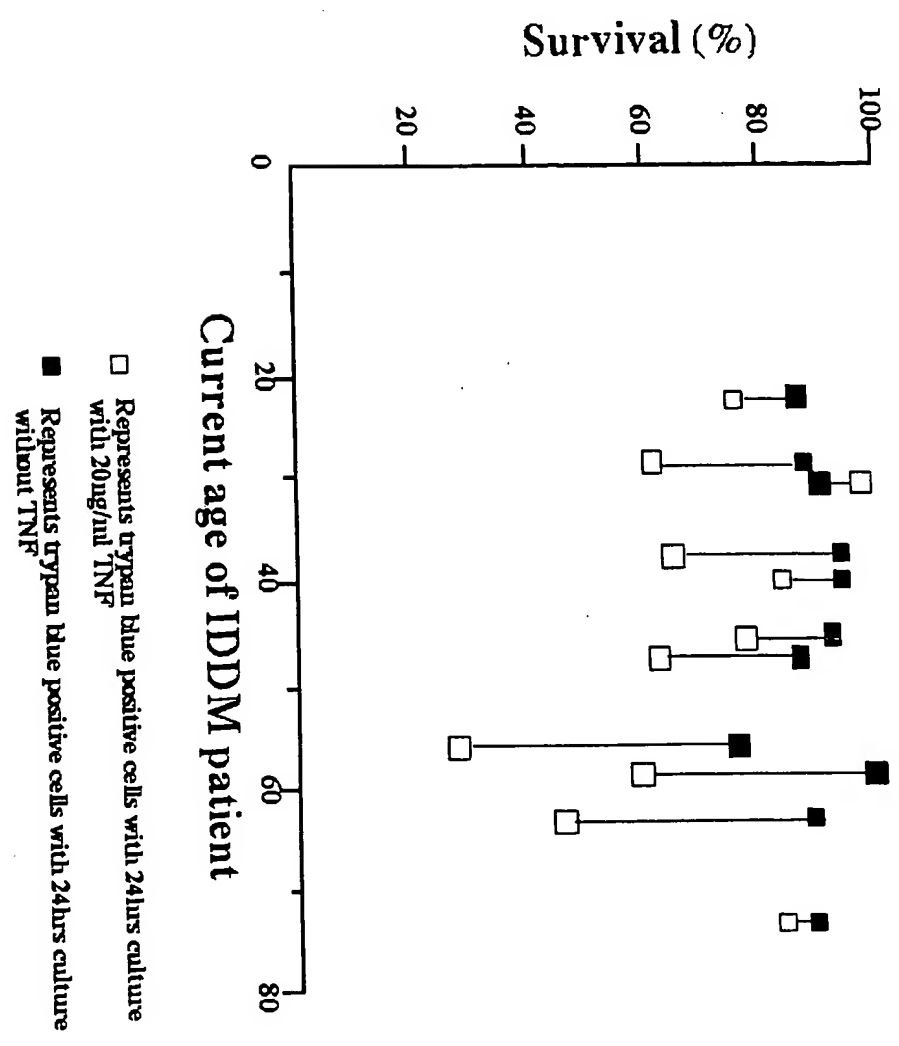


Figure 15

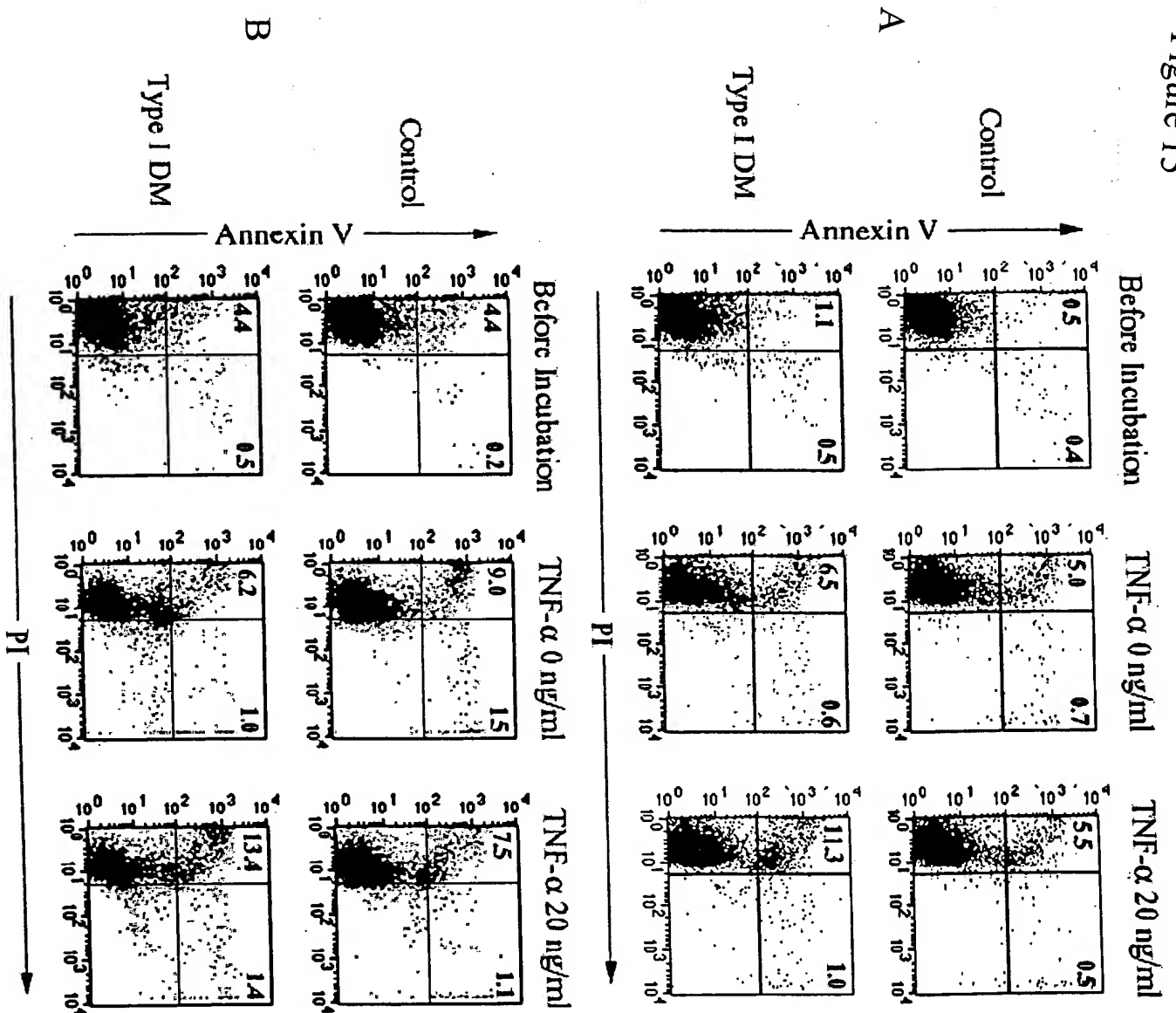




FIG. 16

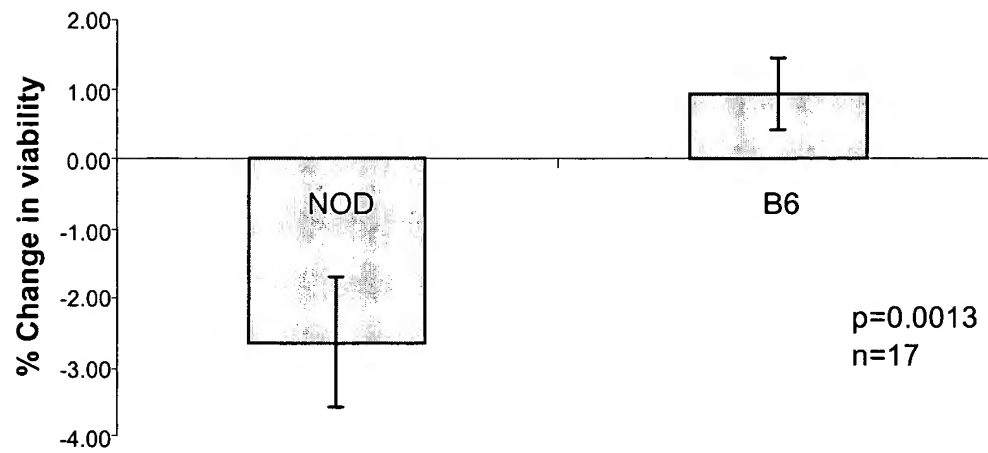


FIG. 17A

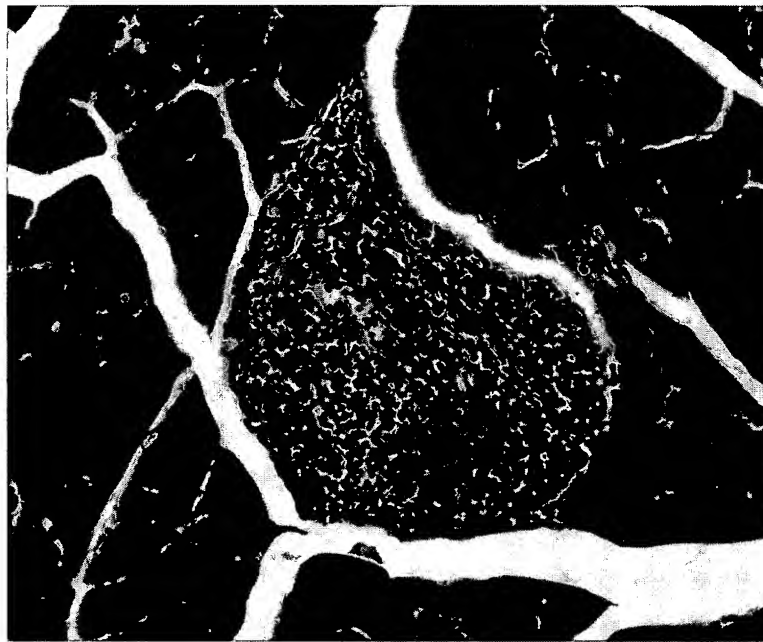
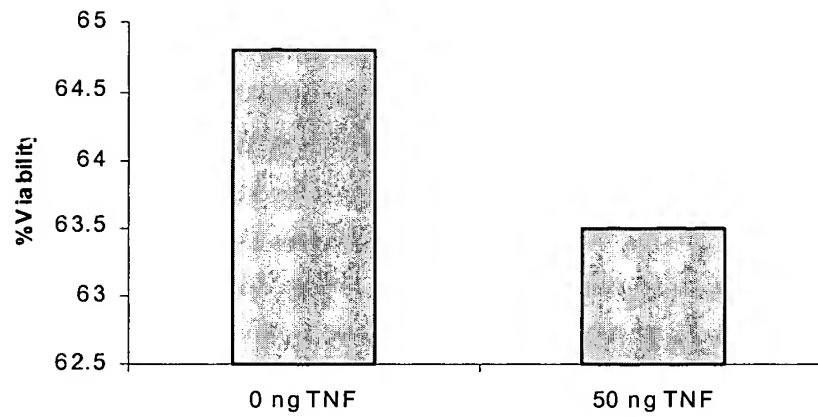


FIG. 17B

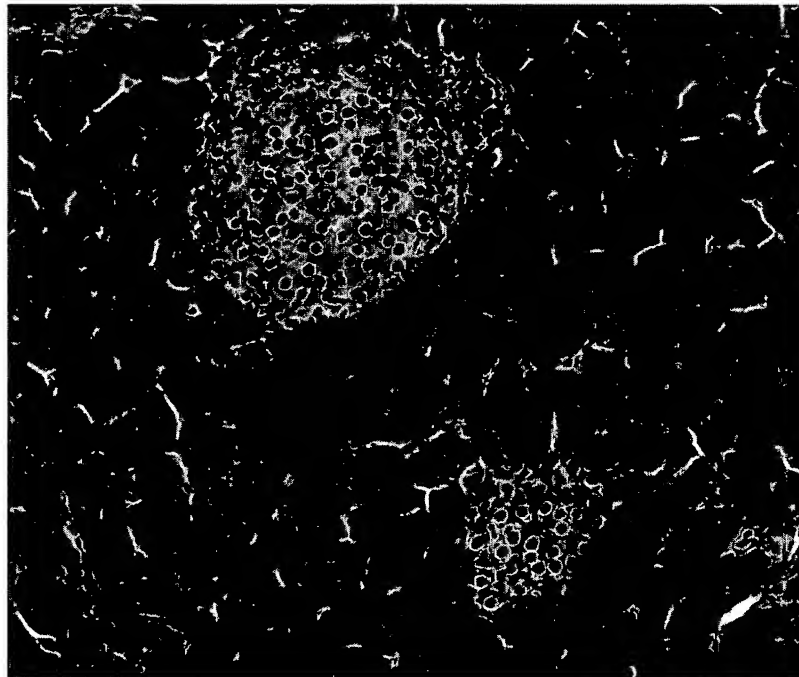
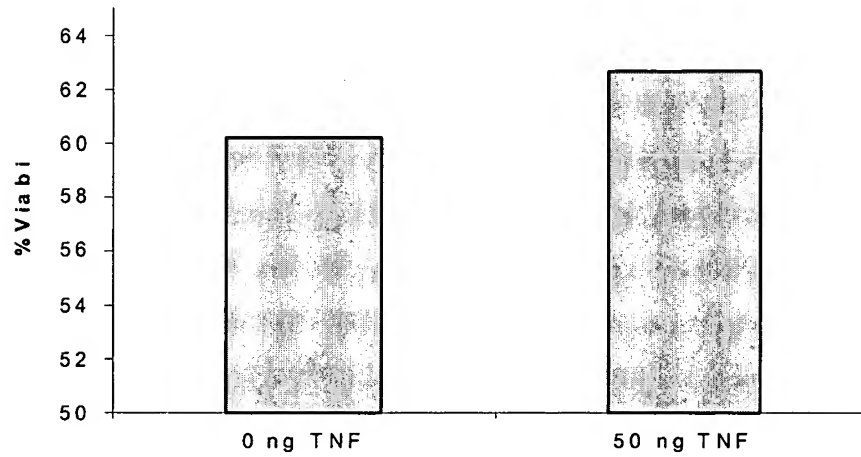


FIG. 17C

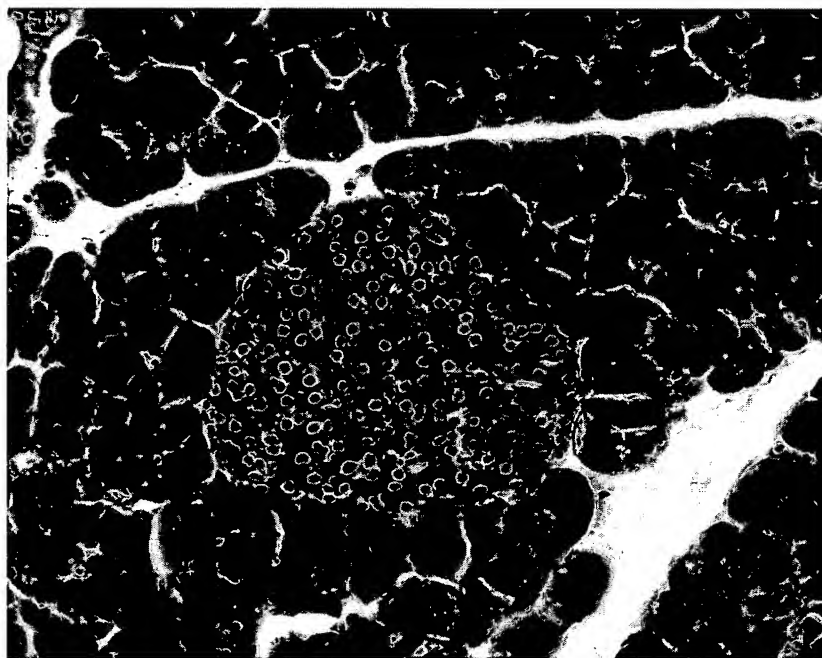
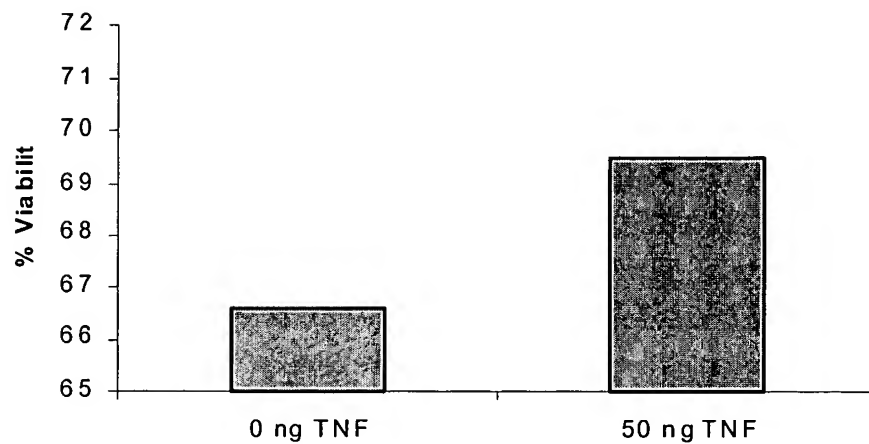


FIG. 18A

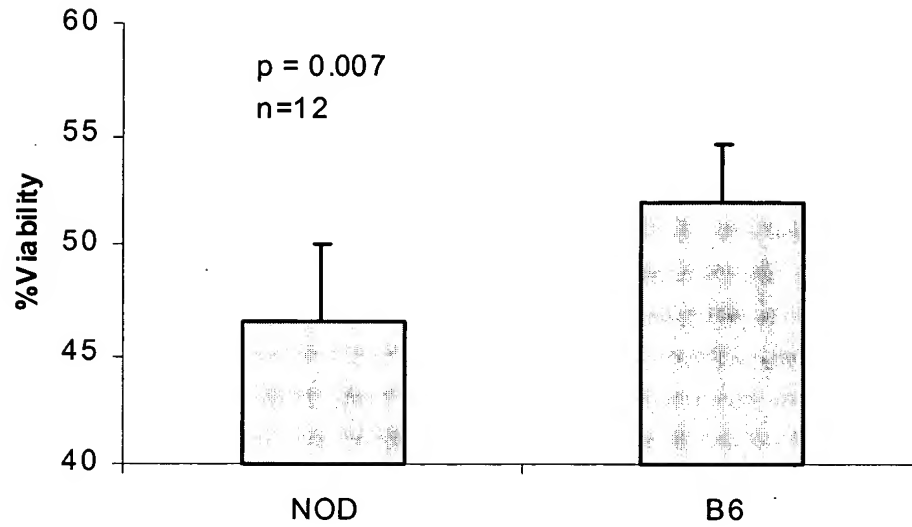


FIG. 18B

